

# ADVANCED Math 7

## STUDY GUIDE: Unit 1 Test—Part 1

**PART I: SOL 7.1a Recognize powers of 10 with negative exponents by examining patterns.**

**Write a power of 10 with a negative exponent in fraction and decimal form.**

1. What is  $10^{-6}$  in decimal form? \_\_\_\_\_

May use a calculator for this section only! 7.1a

**Complete the table:**

<i>Power of ten</i>	<i>Fraction</i>	<i>Decimal</i>
$10^{-2}$	2a.)	2b.)
3a.)	3b.)	0.00001
4a.)	$\frac{1}{10,000}$	4b.)

5. Select all choices that are equivalent to  $10^{-3}$ .

$\frac{1}{10^{-3}}$	-0.001	$\frac{1}{10} \cdot \frac{1}{10} \cdot \frac{1}{10}$
0.001	$\frac{1}{1000}$	$\frac{1}{10^3}$

**Part II. SOL 7.1b Write a number greater than 0 in scientific notation. Recognize a number greater than 0 in scientific notation.**

6. Which of the following is correctly written in scientific notation?

- a.  $.7234 \times 10^{-1}$
- b.  $72.34 \times 10^2$
- c.  $7.234 \times 10^3$
- d.  $7,234 \times 10^0$



8. Express the following in scientific notation:  
0.00602

7. An african male elephant can grow to be 13,000 pounds. Which of the following shows the elephant's weight in scientific notation.

- a.  $0.13 \times 10^5$
- b.  $1.3 \times 10^4$
- c.  $13 \times 10^3$
- d.  $130 \times 10^2$

9. Express the following in standard notation:  
 $2 \times 10^{-4}$

**Part III: SOL 7.1c Compare, order and determine equivalent relationships among fractions, decimals and percent form. Ordering is limited to no more than 4 numbers.**

**\*SOL 8.1b Compare and order no more than five fractions, decimals, percents and numbers in scientific notation.**

Complete the table:



Fraction	Decimal	Percent
$\frac{1}{8}$	10a.)	10c.)
$\frac{3}{5}$	11a.)	11b.)
$\frac{1}{3}$	12a.)	12b.)

13. Order the following rational numbers from least to greatest:

68% ,  $\frac{4}{6}$  ,  $6.6 \times 10^2$  , 0.066

\_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

Least → Greatest

14. Order the following rational numbers from greatest to least:

$\frac{1}{2}$  , 55.5% ,  $5.8 \times 10^{-1}$  , 0.05

\_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

Greatest → Least

15. Fill in the blank with the correct answers.

$$\frac{3}{8} < \underline{\hspace{1cm}} < \frac{4}{9}$$

a. 50%

b.  $\frac{2}{5}$

c. 0.3

d.  $\frac{5}{8}$



**Part IV: SOL 7.1d Determine the square root of a perfect square less than or equal to 400. \*SOL 8.5 Identify two consecutive whole numbers between which the square root of a given number 0 – 400 lies.**

16. The number 225 is a perfect square?

a. YES

b. NO

17. The number 196 is a perfect square?

a. YES

b. NO

\*18. The square root of 17 lies between which two whole numbers?

\_\_\_\_\_ and \_\_\_\_\_

\*19. The square root of 40 lies between which two whole numbers?

\_\_\_\_\_ and \_\_\_\_\_

20. What is the square root of 324?

21. Circle the perfect squares below?

4	199	250	10	289	36	1	361	50
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Part V. SOL 7.1e Demonstrate absolute value using a number line. Determine the absolute value of a rational number

22. When plotted on a number line, which value is closest to the absolute value of -5?

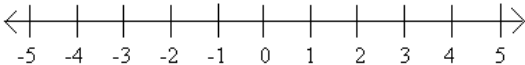
- a.  $| - 18 |$
- b.  $- | 6 |$
- c.  $| - 4 |$
- d.  $| 16 |$



23. Circle all the values in the table equal to 5:

$-   - 5  $	$  \frac{1}{5}  $	-5
5	$-   5  $	$  - 5  $

24. Plot all values that have the absolute value of 1 on the number line.



25. Simplify:  $| 8 | - | - 2 |$

26. Circle all the true statements in the table:

$-   2   = 2$	$  - 12   = - 12$	$  652   = 652$
$-   43   = - 43$	$  21   = - 21$	$  - 36   = 36$

\*Part VI. SOL 8.2 Identify the subsets of the real number system to which a given number belongs.

Classify each real number below by placing a checkmark in the box.

	Irrational	Rational	Integer	Whole	Natural
27. -11					
28. 75%					
29. $\sqrt{25}$					
30. $\frac{1}{2}$					
31. 4					